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Rubella **(German Measles, 3 Day Measles)** **Table of Contents**

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Rubella (German Measles, 3 Day Measles)

Overview

For a more complete description of rubella, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM)
- Red Book, Report of the Committee of Infectious Diseases
- “Pink Book,” Epidemiology and Prevention of Vaccine-Preventable Diseases
- Manual for the Surveillance of Vaccine-Preventable Diseases

Case Definition ⁽⁴⁾

Clinical description

An acute onset of generalized maculopopular rash with a temperature of $>37.2^{\circ}\text{C}$ ($>99^{\circ}\text{F}$) with arthralgia/arthritis, lymphadenopathy or conjunctivitis.

Laboratory criteria for diagnosis


Isolation of rubella virus or significant rise in serum rubella IgG antibody level by standard serologic assay or positive test for serum rubella IgM antibody.

Case classification

- Suspect A case with any generalized rash illness of acute onset.
- Probable A case that meets the clinical case definition, has noncontributory or no serologic or viralologic testing, and is not epidemiologically linked to a laboratory-confirmed case.
- Confirmed A case that is laboratory-confirmed or that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.

Comment

Rubella is a category I disease, reportable within 24 hours of first knowledge or suspicion. Missouri State Laboratory reports are submitted automatically to the Section of Communicable Disease Prevention (SCDP). Private laboratory results must be submitted to the SCDP with the disease investigation form as soon as possible. Reporting of all cases of rubella and of Congenital Rubella Syndrome (CRS) to CDC is obligatory in the United States. ⁽¹⁾

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Information Needed for Investigation

Verify the diagnosis. What laboratory tests were conducted and what were the results? Does the probable case meet case definition?

Establish the extent of illness. Is the patient properly vaccinated? Are there any other cases?

Contact the Regional Communicable Disease Coordinator assigned to your area..

Contact the Bureau of Child Care when case(s) are associated with a child-care facility.

Complete an ImmP-4 “Rash Investigation” form.

Case/Contact Follow Up and Control Measures

Determine the source of infection:


- Is the case aware of other persons with similar illness?
- Has the case traveled outside the immediate area during the exposure period (14-21 days prior to when rash first appeared)?
- Did the case attend any group meetings or gatherings during the exposure period (14-21 days prior to when rash first appeared)?

Control Measures

- See the Rubella section of the Red Book.
- See the Rubella section of the “Pink Book.”
- See the Rubella/Congenital Rubella section of the Control of Communicable Disease Manual (CCDM).

General

- A case is most communicable from about a week before the rash appears to 5-7 days after appearance of rash. Infants with CRS may shed virus for months after birth. ⁽²⁾
- Determination of immunization status of contacts assists with the prevention of possible additional cases.
- Unimmunized (1 dose of rubella-containing vaccine after 12 months of age) contacts and those with questionable immunization status should be priorities for immediate vaccination.
- If case attends School or Day Care/Preschool, facility immunization files should be audited to determine immunization status of other attendees.
- If hospitalized, patient should be isolated and caregiver’s immunization status should be evaluated and precautions taken. Likewise, other exposed persons (i.e., waiting-room visitors, clerical, housekeeping personnel, etc.) within the facility should be identified and evaluated.
- **Vaccination is contraindicated for pregnant females.** ^(1, 2, 3)

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- **Pregnant females (especially those in the first trimester) who are naturally infected or exposed should *immediately* consult their private physician.**

Laboratory Procedures

Serology is the most common method of confirming the diagnosis of rubella. Sera should be collected as early as possible (within 7-10 days) in a “red-topped” tube, after onset of illness and again 14-21 days (minimum of 7) days later. Some of the tests that are available are: Enzyme-linked immunosorbent assays (ELISA), Latex agglutination (LA), Immunofluorescent antibody assay (IFA) and Hemagglutination inhibition (HAI). The older HAI, while formerly the standard, has been generally replaced some of the more sensitive assays. ⁽²⁾


Reporting Requirements

Rubella is a category I disease reportable within 24 hours of first knowledge or suspicion to the local health authority or to the Department of Health and Senior Services.

1. For suspect, probable, or confirmed cases, complete a Disease Case Report (CD-1) and an ImmP-4 “Rash Investigation” form revised 1/98.
2. Entry of the CD-1 information into MOHSIS negates the need for the paper CD-1 to be forwarded to a Regional Health Office.
3. Send the completed ImmP-4 “Rash Investigation” forms to the Regional Health Office.
4. All outbreaks or “suspected” outbreaks must be reported as soon as possible (by phone, fax, or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days of the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

References

1. James Chin, ed. “Rubella” (German Measles), Congenital Rubella (Congenital rubella syndrome), Control of Communicable Diseases Manual, 17th ed. Washington D.C.: American Public Health Association. 2000: 435-440.
2. American Academy of Pediatrics, “Rubella.” In: Pickering, LK, ed. 2000 Red Book: Report of the Committee of Infectious Diseases. 25th Ed. Elk Grove Village, IL. 2000: 495-500.
3. W. Atkinson, C. Wolfe, (Eds) Epidemiology and Prevention of Vaccine-Preventable Diseases, 7th Edition. Centers for Disease Control, Atlanta, Georgia. January 2002: 124-138.
4. Centers for Disease Control. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46 (RR-10): 29.

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Other Sources of Information

Web Sites

1. Centers for Disease Control, National Immunization Program,
<http://www.CDC.gov/nip/default.htm> (05 June, 2003)
2. Missouri Department of Health and Senior Services,
<http://www.dhss.state.mo.us/Immunizations/> (05 June, 2003)
3. Immunization Action Coalition, <http://www.immunize.org> . (05 June, 2003)
4. Lombardo, P.C., eMedicine: Measles Rubella 20 November, 2001,
<http://www.emedicine.com/DERM/topic380.htm> (05 June, 2003)

IMMP-4

COMPLICATIONS

	YES	NO	UNKNOWN		YES	NO	UNKNOWN
Diarrhea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Physician Visit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pneumonia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DATE OF VISIT	PHYSICIAN NAME		
Encephalitis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PHYSICIAN ADDRESS			
Otitis Media	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		YES	NO	UNKNOWN
Hospitalization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Atypical Measles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Date _____				Death	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other _____				DATE OF DEATH	CAUSE OF DEATH		

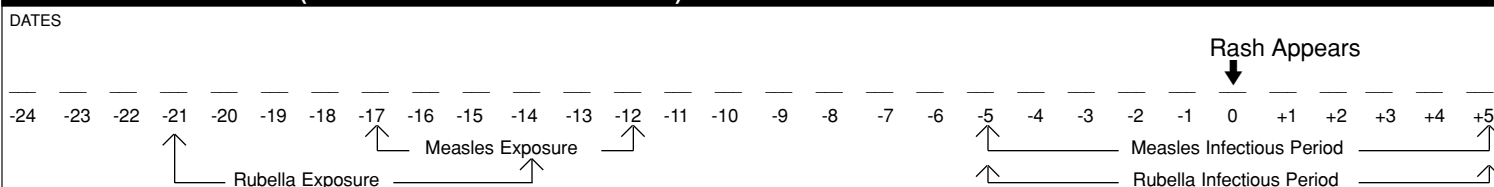
LABORATORY

WAS TESTING FOR RUBELLA OR MEASLES DONE?			PLEASE SPECIFY DISEASE		
<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> UNKNOWN	<input type="checkbox"/> MEASLES	<input type="checkbox"/> RUBELLA	
DATE IgM SPECIMEN TAKEN			IgM RESULT		
MONTH	DAY	YEAR	<input type="checkbox"/> POSITIVE	<input type="checkbox"/> INDETERMINANT	<input type="checkbox"/> NOT DONE
			<input type="checkbox"/> NEGATIVE	<input type="checkbox"/> PENDING	<input type="checkbox"/> UNKNOWN
DATE IgG ACUTE SPECIMEN TAKEN			IgG RESULT		
MONTH	DAY	YEAR	<input type="checkbox"/> SIGNIFICANT RISE IN IgG	<input type="checkbox"/> INDETERMINANT	<input type="checkbox"/> NOT DONE
			<input type="checkbox"/> NO SIGNIFICANT RISE IN IgG	<input type="checkbox"/> PENDING	<input type="checkbox"/> UNKNOWN
DATE IgG CONVALESCENT SPECIMEN TAKEN			SPECIFY OTHER LAB METHOD		
MONTH	DAY	YEAR	OTHER RESULTS		
			<input type="checkbox"/> POSITIVE	<input type="checkbox"/> INDETERMINANT	<input type="checkbox"/> NOT DONE
			<input type="checkbox"/> NEGATIVE	<input type="checkbox"/> PENDING	<input type="checkbox"/> UNKNOWN
WAS CASE LABORATORY CONFIRMED?					
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN					

VACCINE HISTORY

HAD CASE EVER RECEIVED MEASLES/RUBELLA-CONTAINING VACCINE?					
<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN					
VACCINATION DATE (MONTH/DAY/YEAR)			IF CASE WAS NOT VACCINATED, WHAT WAS THE REASON?		
1.	3.		<input type="checkbox"/> RELIGIOUS EXEMPTION	<input type="checkbox"/> LABORATORY EVIDENCE OF PREVIOUS DISEASE	<input type="checkbox"/> PARENTAL REFUSAL
			<input type="checkbox"/> MEDICAL CONTRAINDICATION	<input type="checkbox"/> PHYSICIAN DIAGNOSIS OF PREVIOUS DISEASE	<input type="checkbox"/> OTHER
2.	4.		<input type="checkbox"/> PHILOSOPHICAL EXEMPTION	<input type="checkbox"/> UNDER AGE FOR VACCINATION	<input type="checkbox"/> UNKNOWN
NUMBER OF DOSES RECEIVED BEFORE FIRST BIRTHDAY			NUMBER OF DOSES RECEIVED ON OR AFTER FIRST BIRTHDAY		
IF VACCINATED BEFORE FIRST BIRTHDAY, BUT NO DOSES GIVEN ON OR AFTER FIRST BIRTHDAY, WHAT WAS REASON?					
<input type="checkbox"/> RELIGIOUS EXEMPTION	<input type="checkbox"/> LABORATORY EVIDENCE OF PREVIOUS DISEASE	<input type="checkbox"/> PARENTAL REFUSAL			
<input type="checkbox"/> MEDICAL CONTRAINDICATION	<input type="checkbox"/> PHYSICIAN DIAGNOSIS OF PREVIOUS DISEASE	<input type="checkbox"/> OTHER			
<input type="checkbox"/> PHILOSOPHICAL EXEMPTION	<input type="checkbox"/> UNDER AGE FOR VACCINATION	<input type="checkbox"/> UNKNOWN			
IF RECEIVED ONE DOSE AFTER FIRST BIRTHDAY, BUT NEVER RECEIVED SECOND DOSE AFTER FIRST BIRTHDAY, WHAT WAS REASON?					
<input type="checkbox"/> RELIGIOUS EXEMPTION	<input type="checkbox"/> LABORATORY EVIDENCE OF PREVIOUS DISEASE	<input type="checkbox"/> PARENTAL REFUSAL			
<input type="checkbox"/> MEDICAL CONTRAINDICATION	<input type="checkbox"/> PHYSICIAN DIAGNOSIS OF PREVIOUS DISEASE	<input type="checkbox"/> OTHER			
<input type="checkbox"/> PHILOSOPHICAL EXEMPTION	<input type="checkbox"/> UNDER AGE FOR VACCINATION	<input type="checkbox"/> UNKNOWN			

EPI INFECTIOUS CHART (To Assist in Case Determination)



SOURCE OF INFECTION							
ONSET OF RASH	EXPOSURE PERIOD (ENTER DATES) _____ TO _____						
							YES NO UNKNOWN
Was there any known exposure to measles, rubella, or similar illness during the exposure period?							<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Was there travel outside of the local community during the exposure period?							<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Was there any attendance at any group meetings or gatherings during the exposure period?							<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
If yes to any questions, give details in the contact section.							
ACTIVITY HISTORY FOR 18 DAYS BEFORE RASH ONSET AND 7 DAYS AFTER RASH ONSET							
	DATE			DATE			
<input type="checkbox"/> CHURCH			<input type="checkbox"/> SCHOOL (SPECIFY)				
<input type="checkbox"/> GROUP MEETINGS							
<input type="checkbox"/> BABYSITTER			<input type="checkbox"/> OTHER (SPECIFY)				
<input type="checkbox"/> FAMILY GATHERING							
EPIDEMIOLOGY INFORMATION							
TRANSMISSION SETTING (WHERE DID THIS CASE ACQUIRE MEASLES?)							
<input type="checkbox"/> CHILD CARE	<input type="checkbox"/> HOSPITAL WARD	<input type="checkbox"/> HOME	<input type="checkbox"/> COLLEGE	<input type="checkbox"/> CHURCH			
<input type="checkbox"/> SCHOOL	<input type="checkbox"/> HOSPITAL ER	<input type="checkbox"/> WORK	<input type="checkbox"/> MILITARY	<input type="checkbox"/> INTERNATIONAL TRAVEL			
<input type="checkbox"/> DOCTOR'S OFFICE	<input type="checkbox"/> HOSPITAL OUTPATIENT CLINIC	<input type="checkbox"/> UNKNOWN	<input type="checkbox"/> CORRECTIONAL FACILITY	<input type="checkbox"/> OTHER			
IF TRANSMISSION SETTING NOT AMONG THOSE LISTED AND KNOWN, WHAT WAS TRANSMISSION SETTING?							
OUTBREAK RELATED <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN		IF YES, OUTBREAK NAME (NAME OF OUTBREAK THIS CASE IS ASSOCIATED WITH)					
SOURCE OF EXPOSURE FOR CURRENT CASE							
EPI-LINKED TO ANOTHER CONFIRMED OR PROBABLE CASE <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN			IS CASE TRACEABLE WITHIN 2 GENERATIONS TO AN INTERNATIONAL IMPORTATION? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> UNKNOWN				
PRIMARY AND HOUSEHOLD CONTACTS (INCLUDES CONTACTS/FRIENDS WITH SIMILAR ILLNESS)							
NAME	ADDRESS	RELATION	PHONE	AGE	VACCINE TYPE AND DATE	FOLLOW-UP CALL DATE	DATE OF EXPOSURE
DID YOU RECOMMEND MEASLES VACCINE FOR SUSCEPTIBLE CONTACT? <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, WHY?							
DID YOU CALL SURROUNDING SCHOOLS/CHILD CARES/HEAD STARTS TO ALERT THEM AND TO FIND OTHER CASES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, WHY?							
DID YOU NOTIFY LOCAL PHYSICIANS TO ALERT THEM AND TO REQUEST PROMPT REPORTS OF ADDITIONAL CASES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, WHY?							
DID YOU REQUEST PUBLICITY FROM THE MEDIA? <input type="checkbox"/> YES <input type="checkbox"/> NO IF NO, WHY?							

RUBELLA FORM FOR PREGNANT WOMEN

WAS THE CASE A PREGNANT WOMAN?

☐ YES ☐ NO ☐ UNKNOWN

NUMBER OF WEEKS GESTATION (OR TRIMESTER) AT ONSET OF ILLNESS

PRIOR EVIDENCE OF SEROLOGICAL IMMUNITY

YEAR OF TEST OR AGE OF PATIENT AT TIME OF TEST

☐ YES ☐ NO ☐ UNKNOWN

WAS PREVIOUS RUBELLA SEROLOGICALLY CONFIRMED?

YEAR OF DISEASE OR AGE OF PATIENT AT TIME OF DISEASE

☐ YES ☐ NO ☐ UNKNOWN

NOTES

Age Age of patient at rash onset in number of years, months, weeks, or days.

Outbreak (Measles)(Rubella) ≥ 3 cases (with at least one laboratory confirmed case) clustered in space and time.

Death If patient died from measles or rubella, verification with the physician is recommended.

Source of exposure A source case must be either a confirmed or probable case and have had face to face contact with a subsequent generation case. Exposure must have occurred 7 to 18 days before rash onset of the new case, and between 4 days before rash onset and 7 days after rash of the source case.

Epi-linked An epi-linked case is either a source case or same generation case. Epi-linkage is characterized by direct face to face contact. For same generation cases that are epi-linked a common exposure is likely.

COMMENTS

DATE CASE FIRST REPORTED TO STATE
MONTH DATE YEAR

FORM COMPLETED BY

TELEPHONE

DATE FORM COMPLETED

MONTH DATE YEAR